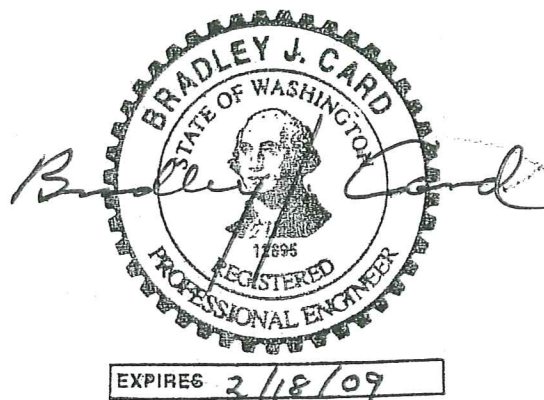


SITE ASSESSMENT ENGINEERING REPORT UNDERGROUND STORAGE TANK REMOVAL

GE AVIATION

2720 West Washington Avenue

Yakima, Washington



February 2008

Job No. J07299

Prepared by

**PLSA ENGINEERING & SURVEYING
1120 West Lincoln Avenue
Yakima, WA 98902
(509) 575-6990**



SUMMARY
SITE ASSESSMENT ENGINEERING REPORT
SUMMARY

PETROLEUM RELEASE CLEANUP

GE AVIATION
2720 WEST WASHINGTON AVENUE
YAKIMA, WASHINGTON

On or about mid-November 2007, GE Aviation discovered a small leak in a 1 ½ inch diameter galvanized steel pipe associated with a 1,200 gallon buried interceptor tank. This system conveys and stores and emulsion of oil and water used for cooling machining operations at a facility located at 2720 West Washington Avenue, Yakima, Washington. The pipe was found to have deteriorated over time. The precast concrete tank connected to the pipe was originally designed as a septic tank. The tank was found to be sound, but it had overflowed at least one time contaminating the soil directly beneath the tank with petroleum based "cooling" or "lube" oil.

The release was reported to the Washington State Department of Ecology immediately after it was discovered.

Inspection of the tank upon removal found it to be sound, in good condition, and nearly free of scaling or other deterioration. The tank basin extended down to within 1.5 feet above the groundwater table, which is approximately 8 feet below the ground surface. Impacted soil was excavated and delivered to the Rocky Top remediation site located west of Yakima. Once the impacted soil was removed, soil samples were collected from the bottom of the tank basin to confirm that all material contaminated by the cooling oil had been recovered. The analytical results of soil and water samples from the bottom of the side of the excavation confirm that the cooling oil utilized by GE Aviation has been removed to below the limits found in WAC 172-340-900.

Water samples collected from water flowing into the dewatered excavation were also confirmed to not contain heavy oils utilized by GE Aviation; however petroleum species typical to aviation fuels were found.

SITE ASSESSMENT ENGINEERING REPORT

UNDERGROUND STORAGE TANK REMOVAL

GE AVIATON
2720 West Washington Avenue
Yakima, Washington

INTRODUCTION

GE Aviation machines aircraft parts at a plant at 2720 West Washington Avenue, Yakima, Washington (Facility). Waste cutting oil, which is an emulsion of lubricating oil and water, is used for cooling purposes, and then discharged to a temporary storage through a 1 ½ inch, galvanized, steel pipe. The temporary storage is then pumped to an evaporator system which then separates the oil and water for eventual recovery. Electrolysis had caused the pipe to corrode and leak. Discovery of the leaking supply pipe and evidence of overflow of the adjacent underground receiving tank triggered GE Aviation to remove the petroleum contaminated soil and to replace the previous holding tank system with one designed to prevent any such release in the future. The tank basin is located at the Facility in the SE 1/4, NW 1/4, SEC 35, TWP 13, R18-EWM. See Figure 1 Aerial Photo.

The original underground receiving tank was a 1200 gallon, precast, concrete septic tank. The tank was removed and found to be sound and in good condition and that the contents had overflowed at the top at the manhole covers which were supported by riser shims that were not water tight. As a result, it is believed that the cooling oil emulsion flowed out of the top of the tank and along the outside of the tank beneath the surface.

This report summarizes site conditions and the results of laboratory testing of representative water and soil samples for presence of Total Petroleum Hydrocarbons (TPH) and metals as appropriate. Engineers from PLSA Engineering and Surveying, experienced with local soil conditions recently monitored removal of the underground storage tank (UST), and collected soil and water samples from the tank basins as appropriate.

Tank removal was conducted by Ken Leingang Excavating, Inc.

The owner's representative and contact person for this project follows:

Mr. Daryl Robins
GE Aviation
2720 West Washington Avenue
Yakima, Washington 98902
Phone (509) 248 5000, ext 261

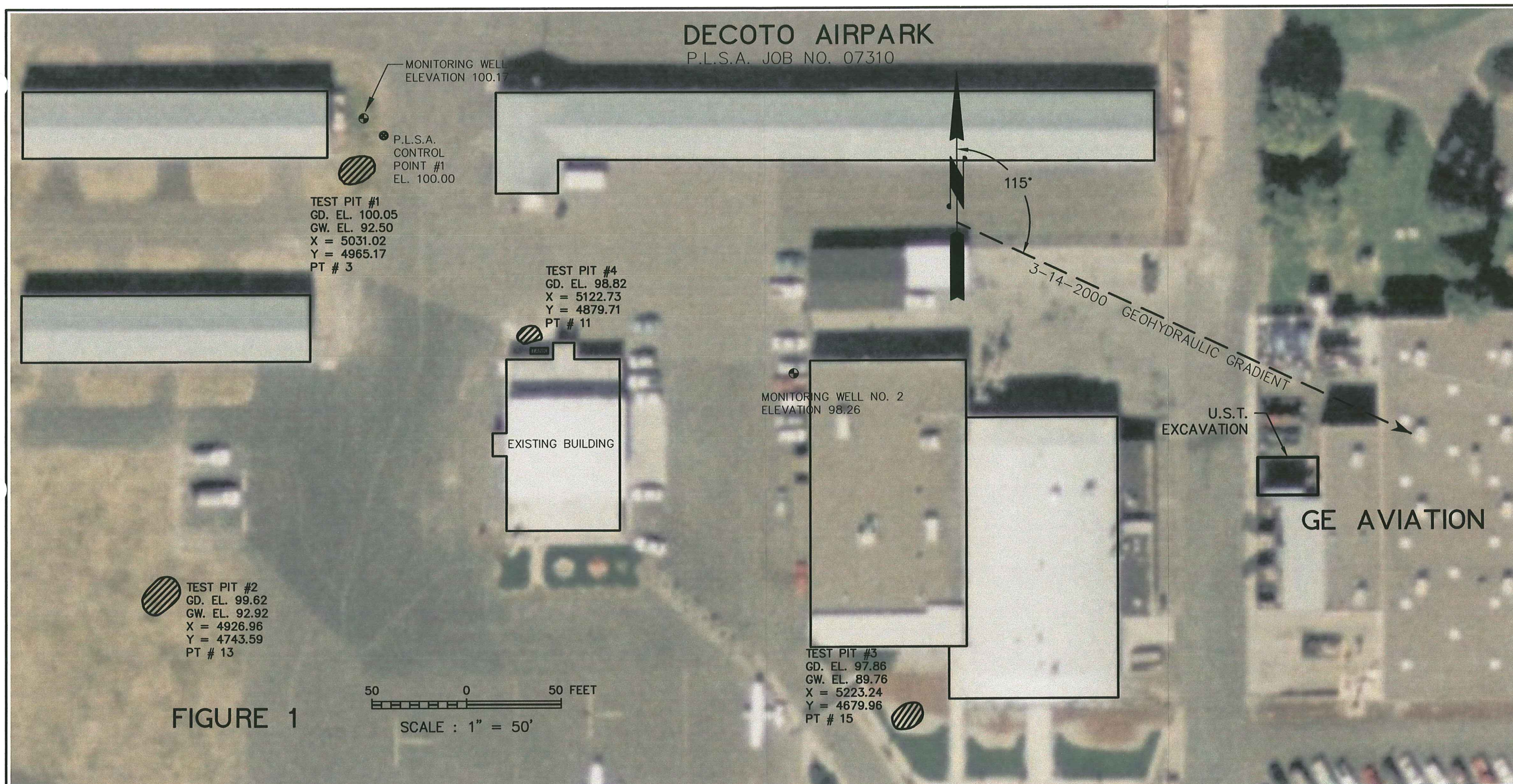


FIGURE 1
PREPARED FOR
LEINGANG EXCAVATION

PLSA

ENGINEERING-SURVEYING-PLANNING
1120 WEST LINCOLN YAKIMA, WASHINGTON (509) 575-6990

DATE
12-26-07

DRAWN BY
J.GAMACHE

JOB NO.
07310

SITE BACKGROUND

The property has been used as an aircraft parts manufacturing site for several decades. Various owners have operated the aircraft parts plant with the most recent being GE Aviation. Metal machining operations require coolant and lubricant to facilitate machining and to cool the tools in contact with the parts undergoing machining. An emulsion of coolant oils and water is the most frequently used mixture for this purpose. The site has never used aviation fuel.

SURFACE CONDITIONS

Concrete paving covered the tank basin and surrounding yard.

SUB-SURFACE CONDITIONS

The tank was bedded in native soil in a tank basin excavated in the native silt. Groundwater was encountered approximately 8 feet below the surface. The tank bottom extended to about 5.5 feet below ground surface, and did not extend down to groundwater.

From general topography, it appears that the groundwater hydraulic gradient is to the southeast towards Ahtanum Creek located approximately 1 mile away.

SAMPLING PLAN

Four representative soil samples were collected from the bottom of the tank basin. Sample containers supplied by the analytical laboratory were clean glass with Teflon lined, screwed caps. Water samples were collected from water flowing into the dewatered excavation in bottles furnished by the laboratory. Water appeared to be flowing into the dewatered excavation from the upgradient side. Sampling equipment was cleaned with non-petroleum based detergent between samplings. A groundwater sample was collected from the bottom of the tank basin.

Valley Environmental Laboratory in Yakima, Washington, WDOE accreditation C345, was selected to perform the analyses. Quality control procedures are on file at Valley Environmental Laboratory.

All samples were delivered to the laboratory immediately after collection. Copies of Chain of Custody and analytical results may be found in Appendix I, Analytical Results.

CONTAMINANT CHARACTERIZATION

Soil excavated from the tank basin was evaluated for petroleum contamination using visual and olfactory means. Laboratory analysis confirmed the presence of heavy oil contamination in soil from the tank basin. See Appendix I, Analytical Results. Earlier laboratory tests had detected a small quantity of non-leachable metals which were typical of those metals being machined, and which consisted of particles from the machining process. See Appendix I Analytical Results.

After the tank and that soil field determined as contaminated had been removed, soil samples were collected from the bottom of the sides within the tank basin. These samples were submitted

**G.E. AVIATION
FACILITY**

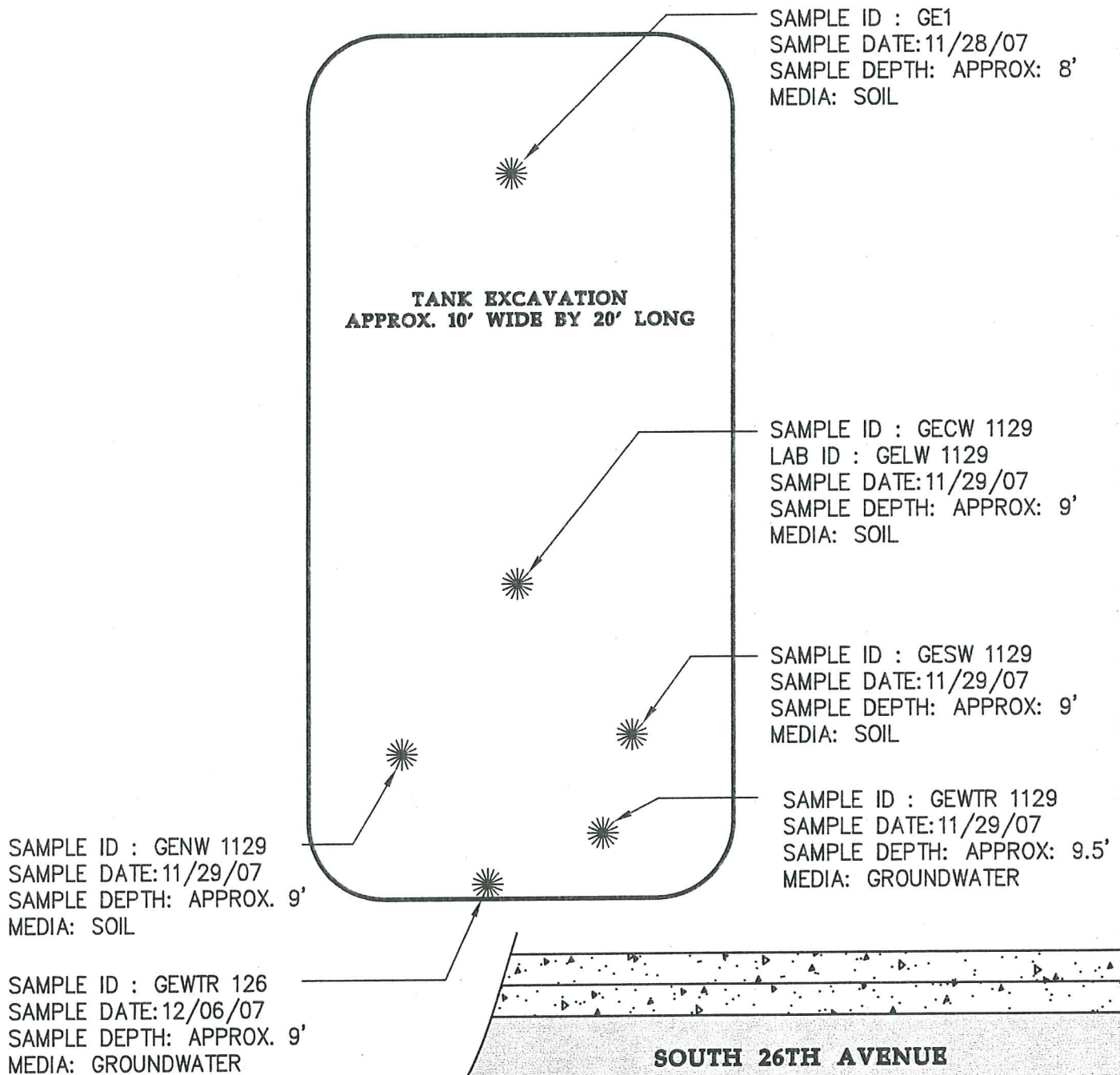


FIGURE 2
APPROXIMATE SAMPLE LOCATIONS

PLSA

ENGINEERING-SURVEYING-PLANNING
1120 WEST LINCOLN YAKIMA, WASHINGTON (509) 578-6990

DATE	1-07-08
DRAWN BY	S. GARLAND
JOB NO.	07310

to Valley Environmental Laboratory for analysis and characterization for WTPH-HCID, and metals as appropriate.

CLEANUP

A track mounted excavator was used to remove petroleum contaminated soil from the tank basin until no visual or olfactory indication of cooling oil contamination remained. Soil samples were then collected from the bottom of the tank basin at the edges. See Figure 2, Approximate Sample Locations. The soil samples were submitted to Valley Environmental Laboratory for analysis for WTPH-HCID. All final soil samples analyzed were within limits found in WAC 173-340-900, Table 740-1. A water sample collected from groundwater flowing into the bottom of the excavation was similarly submitted to the laboratory. The groundwater appeared to be flowing into the detwatered excavation from the upgradient side. This groundwater sample was found to contain lighter petroleum species, such as kerosene, that are not consistent with the cooling oil used in the GE Aviation operations. Since the water was flowing into the excavation on the upgradient side and that the petroleum contamination found was a lighter petroleum fraction not typical of that used in GE Aviation operations, it is believed that the contamination found in the groundwater is from an off-site source.

PLSA has earlier performed the field measurements and calculations to determine the groundwater hydraulic gradient at the property located immediately west of the GE premises. The results may be found in Figure 1 which shows the groundwater hydraulic gradient to be toward the southeast where a release could migrate toward the GE premises. Because this is an airport location, the lighter petroleum fractions are likely associated with off-site aircraft fueling operations.

CONCLUSIONS

The tank appeared to be in good condition with no scaling or evidence of other corrosion. Petroleum release appeared to be the result of overfilling the tank with emulsified petroleum and water flowing out through the unsealed joints in the extension risers or "collars" supporting the tank access cast iron manhole covers. Piping supplying the storage tank and extending into the GE Aviation building appeared to have been leaking at the building wall penetration.

Groundwater flowing into the tank basin excavation was sampled and found to not contain petroleum species used by GE Aviation. The groundwater sample was collected from water flowing into the hydraulically upgradient side of the excavation which is in the direction of an earlier tank removal and rumored jet fuel release on an adjacent upgradient fixed base aviation facility.

Soil samples from the tank basin are within WAC 173-340-740 action limits.

RECOMMENDATIONS

Based on confirmation that all petroleum materials associated with GE operations have been removed, no further action by GE Aviation is warranted.

SITE CLOSURE

The underground system may be eliminated with all operations involving petroleum products taking place above ground.

Alternatively, the concrete tank may be replaced with a double wall, fiberglass tank placed within a secondary containment basin lined with a 60 mil, HDPE, membrane liner and the surface over the excavation restored to its former condition. A watertight manway extending above the surrounding concrete slab will be fitted to the double wall fiberglass holding tank. There will be no unsealed joints in the tank or connected catch basins and the tank, if overfilled, would overflow out the access onto the surrounding concrete slab surface where it can be cleaned up before entering the environment.

TANK AND PIPING DISPOSAL

The tank was cleaned by GE personnel using a pressure washer and was then crushed and disposed of with the PCS. Piping from the tank basin was disposed of as scrap.

SITE CHECK/SITE ASSESSMENT CHECKLIST

A completed Site Check/Site Assessment Checklist form may be found in Appendix II.

APPENDIX I

ANALYTICAL RESULTS

PLSA ENGINEERING & SURVEYING

1120 West Lincoln Avenue
YAKIMA, WASHINGTON 98902

(509) 575-6990
FAX (509) 575-6993

TO

FILE

DATE 12-6-07	JOB NO. 07310
PROJECT GE AVALATION / LEINGANG	
LOCATION WASHINGTON AVE.	
CONTRACTOR LEINGANG	OWNER
WEATHER CLOUDY	TEMP. 36° at 10:00 AM °at PM
PRESENT AT SITE VIC - LEINGANG	

THE FOLLOWING WAS NOTED:

> AN ADDITIONAL WATER SAMPLE WAS TAKEN AT THE NORTH END OF THE EXCAVATION, APPROXIMATELY 6" ABOVE THE BOTTOM OF THE EXCAVATION. WATER FLOWING THROUGH THE SIDE OF THE EXCAVATION WAS SAMPLED.

EXCAVATION WAS PURGED PRIOR TO SAMPLING.

This field report is invalid without a date and PLSA technician's signature.

additional test sheets are applicable they must be attached.

COPIES TO _____

FIELD REPORT

SIGNED

[Signature]

Washington State Certified Lab #153 - DOE Accredited Lab C345
NWTPH-HCID

[illegible]

W Russell

P L S A ENGINEERING & SURVEYING

1120 West Lincoln Avenue
YAKIMA, WASHINGTON 98902

(509) 575-6990
FAX (509) 575-6993

TO

FILE

DATE	11-29-07	JOB NO.	07310
PROJECT	GE MECHAN / LEINGANG		
LOCATION			
CONTRACTOR	LEINGANG	OWNER	
WEATHER	CLOUDY	TEMP.	39° at 3:00 PM
PRESENT AT SITE	VIC - LEINGANG		

THE FOLLOWING WAS NOTED:

THREE SOIL SAMPLES WERE TAKEN FROM THE WEST HALF OF THE EXCAVATION. ONE ON THE NORTH SIDE, ONE ON THE SOUTH SIDE AND THE THIRD NEAR THE CENTER, JUST INTO THE WEST HALF.

ONE WATER SAMPLE WAS TAKEN AT THE NORTHWEST CORNER OF THE EXCAVATION. LEINGANG HAD PURGED SEVERAL VOLUMES OF WATER PRIOR TO SAMPLING AND WAS PUMPING DURING SAMPLE. SAMPLE WAS TAKEN FROM THE BOTTOM OF THE EXCAVATION

This field report is invalid without a date and PLSA technician's signature.

Additional test sheets are applicable they must be attached.

COPIES TO _____

FIELD REPORT

SIGNED _____

NWTPH-HCID

Lab/Sample No: Below		Date Collected: 11/30/07	
Date Received: 11/30/07		Date Reported: 12/04/07	Supervisor: BKO
		Sampled By: SDA	
Sample Location: see below			Invoice#: 10417
Send Report To:		Sample Information	Matrix: see below
PLSA Engineering Attn: Scott 1120 West Lincoln Avenue Yakima, WA 98902		GE Aviation	

NWTPH-HCID

[illegible]

MRL (Method Reporting Level): Indicates the minimum reporting level required and obtained by the laboratory (always >MDL).

Trigger: DOH Drinking Water response level.

MCL (maximum contaminant level): Highest level recommended by the federal government for public water systems.

ND (Not Detected): Indicates this compound was analyzed and not detected at a level greater than or equal to the MRL.

Approved By:

201 East D Street Yakima, WA 98901 509-575-3999 Fax: 509-575-3068

06101-hcid

THIS INFO WILL BE FOR REPORTING/BILLING* (SEE BELOW)

CLIENT: PLSA ENGINEERING
 ADDRESS: 1120 WEST LINCOLN
YAKIMA WA 98902
 ATTENTION: BRAD/SQA
 PROJECT NAME: GE AVIATION
 PROJECT CONTACT: BRAD
 TELEPHONE: 575 6990 FAX: 575 6993
 Sampled By: SDA.

CHAIN OF CUSTODY :ORD

WORK ORDER ID # _____

PAGE 1 OF 1



201 East D St
 Yakima, WA 98901
 (509) 575 - 3999
 Fax: (509) 575 - 3068

TESTS TO PERFORM

FIELD WATER
 FOLLOU-UP
 NO. OF CONTAINERS
 MATRIX: WATER SOIL OR SPECIES

OBSERVATIONS
 COMMENTS, SPECIAL
 INSTRUCTIONS

LAB SA#	SAMPLE ID/LOCATION	DATE	TIME	TESTS TO PERFORM	OBSERVATIONS COMMENTS, SPECIAL INSTRUCTIONS
6101	GE WTR 1129	11/29	4:00 PM	1	FREEZEN = 0.5 ppm
6102	GE SW 1129	11/29	4:00 PM	1	
6103	GE NW 1129	11/29	4:00 PM	1	
6104	GE CW 1129	11/29	4:00 PM	1	

A. A standard turnaround time is assumed unless otherwise marked. B. The laboratory may not be responsible for missed holding time for samples received with less than 50% of the analytical hold time remaining. Please contact the laboratory for further information.

INSTRUCTIONS 1. USE ONE LINE PER SAMPLE. 2. BE SPECIFIC IN TEST REQUESTS. 3. CHECK OFF TESTS TO BE PERFORMED FOR EACH SAMPLE		NAME <u>Same</u>		ADDRESS <u>1130 107</u>		CITY/STATE/ZIP <u>9:30</u>	
* RUSH TURNAROUND IS SUBJECT TO PRIOR LABORATORY APPROVAL		TOTAL NO. OF CONTAINERS		TURNAROUND REQUEST		☐ Standard 10-14 Days ☒ 24-48 Hrs. 100% Rush ☐ 3-Day Rush - 80% ☐ 1 week Rush - 50%	
RELINQUISHED BY (SIGN AND PRINT) <u>Scott L. Lohr</u>		DATE 11-30-07		TIME 9:30		RECEIVED BY (SIGN AND PRINT) <u>Bene Jones</u>	

Finance charges and/or collection fees may be applied to delinquent accounts.

APPENDIX II
SITE ASSESSMENT CHECKLIST



UNDERGROUND STORAGE TANK Site Check/Site Assessment Checklist

FOR OFFICE USE ONLY

Site #: _____

Facility Site ID #: _____

INSTRUCTIONS

When a release has not been confirmed and reported, this Site Check/Site Assessment Checklist must be completed and signed by a person certified by ICC or a Washington registered professional engineer who is competent, by means of examination, experience, or education, to perform site assessments. **The results of the site check or site assessment must be included with this checklist.** This form must be submitted to Ecology at the address shown below within 30 days after completion of the site check/site assessment.

SITE INFORMATION: Include the Ecology site ID number if the tanks are registered with Ecology. This number may be found on the tank owner's invoice or tank permit.

TANK INFORMATION: Please list all tanks for which the site check or site assessment is being conducted. Use the owner's tank ID numbers if available, and indicate tank capacity and substance stored.

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT: Please check the appropriate item.

CHECKLIST: Please initial each item in the appropriate box.

SITE ASSESSOR INFORMATION: This information must be signed by the registered site assessor who is responsible for conducting the site check/site assessment.

Underground Storage Tank Section
Department of Ecology
PO Box 47655
Olympia WA 98504-7655

SITE INFORMATION

Site ID Number (Available from Ecology if the tanks are registered): N/A

Site/Business Name: GE Aviation

Site Address: 2720 W. Washington Ave. Telephone: (509) 248-5000

Yakima
City

Street

WA
State

98902
Zip Code

TANK INFORMATION

Tank ID No.

Tank Capacity

Substance Stored

N/A

1200 gal.

cutting oil

REASON FOR CONDUCTING SITE CHECK/SITE ASSESSMENT

Check one:

- ☒ Investigate suspected release due to on-site environmental contamination.
☐ Investigate suspected release due to off-site environmental contamination.
☐ Extend temporary closure of UST system for more than 12 months.
☐ UST system undergoing change-in-service.
☐ UST system permanently closed with tank removed.
☐ Abandoned tank containing product.
☐ Required by Ecology or delegated agency for UST system closed before 12/22/88.
☐ Other (describe): _____

CHECKLIST

Each item of the following checklist shall be initialed by the person registered with the Department of Ecology whose signature appears below.

	YES	NO
1. The location of the UST site is shown on a vicinity map.	☒	☐
2. A brief summary of information obtained during the site inspection is provided. (see Section 3.2 in site assessment guidance)	☒	☐
3. A summary of UST system data is provided. (see Section 3.1.)	☒	☐
4. The soils characteristics at the UST site are described. (see Section 5.2)	☒	☐
5. Is there any apparent groundwater in the tank excavation?	☒	☐
6. A brief description of the surrounding land use is provided. (see Section 3.1)	☒	☐
7. Information has been provided indicating the number and types of samples collected, methods used to collect and analyze the samples, and the name and address of the laboratory used to perform the analyses.	☒	☐
8. A sketch or sketches showing the following items is provided:		
- location and ID number for all field samples collected	☒	☐
- groundwater samples distinguished from soil samples (if applicable)	☒	☐
- samples collected from stockpiled excavated soil	☐	☒
- tank and piping locations and limits of excavation pit	☒	☐
- adjacent structures and streets	☒	☐
- approximate locations of any on-site and nearby utilities	☒	☐
9. If sampling procedures different from those specified in the guidance were used, has justification for using these alternative sampling procedures been provided? (see Section 3.4)	☒	☐
10. A table is provided showing laboratory results for each sample collected including; sample ID number, constituents analyzed for and corresponding concentration, analytical method and detection limit for that method.	☒	☐
11. Any factors that may have compromised the quality of the data or validity of the results are described.	☒	☐
12. The results of this site check/site assessment indicate that a confirmed release of a regulated substance has occurred.	☒	☐

SITE ASSESSOR INFORMATION

Bradley J. Card, P.E. PLSA Engineering + Surveying
 Person registered with Ecology Firm Affiliated with

Business Address: 1130 W. Lincoln Ave. Telephone: (509) 575-6990
 Street

Yakima WA 98902
 City State Zip Code

I hereby certify that I have been in responsible charge of performing the site check/site assessment described above. Persons submitting false information are subject to penalties under Chapter 173.360 WAC.

12/17/07 Bradley J. Card
 Date Signature of Person Registered with Ecology

If you need this publication in an alternate format, please contact Toxics Cleanup Program at (360) 407-7170. For persons with a speech or hearing impairment call 711 for relay service or 800-833-6388 for TTY.